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Invention

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A63B

[54] Title: Syringe for liquid preparations

[21] Application Case No.: 76107449 [22] Date of Application: December 7, 1987

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[57] Claims:

1. A handheld-style appliance used for subcutaneous or intradermal injection of liquid preparations of active ingredients, it being characterized by being a combination comprising: a preparation supply container (3); an injection needle (7) suitable for connection to said container (3); pump devices (4, 32, 34, 50) used via the injection needle (7) to cause the container (3) to purge; affixing devices (16, 17) used to affix said appliance to the appropriate location on a patient's body; and needle actuation devices (12, 13) used to insert the injection needle (7) into the patient's skin.
2. The appliance based on claim 1 wherein there are flow control devices (20-25).
3. The appliance based on claim 1 wherein it is made into two portions (42, 43), one portion being reusable and the other portion being disposable.
4. The appliance based on claim 3 wherein the disposable portion (42) comprises the supply container (3), whereas the reusable portion comprises devices (51-54) used as the actuation pump device (50).

¹ [Translator's note: Western names are nearly impossible to recreate once they've been rendered into Chinese. What I have given here are approximations only.]

5. The appliance based on claim 1 wherein the supply container (3) is a chamber on said appliance, said chamber being divided by a partition chip (4).
6. The appliance based on claim 1 wherein the supply container (3) is a bellows shape.
7. The appliance based on claim 1 wherein the supply container (3) is an extrudable hose shape.
8. The appliance based on claim 1 wherein the supply container (3) is a plunger syringe shape, its barrel acting as the supply container.
9. The appliance based on claims 6, 7 or 8 wherein an absorbing material to absorb the active ingredients is provided.
10. The appliance based on claim 1 wherein more than one supply container is placed on it.
11. The appliance based on claim 1 wherein the pump device comprises a chamber, this chamber being separated from the supply container by a spring partition chip, and wherein a pressure generating device is placed on it.
12. The appliance based on claim 11 wherein said chamber is filled with a propellant vapor.
13. The appliance based on claim 11 wherein there is an electrochemical, photochemical or chemical system used to generate pressure placed inside said chamber.
14. The appliance based on claim 11 wherein there is an osmotic or electro-osmotic system placed inside said chamber.
15. The appliance based on claim 1 wherein the pump device comprises a mechanical actuation device.
16. The appliance based on claim 15 wherein the mechanical actuation device comprises a spring, a bimetallic element, a shape-memory alloy or a clock mechanism actuation device.
17. The appliance based on claim 1 wherein the pump device comprises an electric or magnetic actuation device.
18. The appliance based on claim 17 wherein an electric pump or partition chip pump or piezoelectric pump comprises an electric clock mechanism actuation device or electromagnet serving as the electric or magnetic actuation device.
19. The appliance based on claim 1 wherein the affixing device has a bonding agent layer shape.
20. The appliance based on claim 1 wherein the affixing device is a medicinal plaster.

21. The appliance based on claim 19 or 20 wherein a type of bonding agent layer containing a local anesthetic is used.
22. The appliance based on claim 1 wherein the diameter of the needle is smaller than 0.05 millimeter.
23. The appliance based on claim 1 wherein the needle actuation device is combined with a valve connecting a control supply container with the needle.
24. The appliance based on claim 16 wherein only one portion of the spring skew shaft of the actuation spring is used.
25. The appliance based on claim 1 wherein it is fitted with an electronic control device used to control the pump device, said control device having distributed style data memory for presetting the program release.
26. The appliance based on claim 1 wherein the pump device is an extrudable hose pump shape, said pump being capable of changing the hose cross-section, and this pump causes release of the distributed style settable program.
27. The appliance based on claim 1 wherein the needle actuation device is designed for providing a depth of penetration of 0.5-5 millimeters.
28. The appliance based on claim 1 wherein the container has an opening that is closed by the partition chip, and the container is filled through this and other openings shortly before use.
29. The appliance based on claim 1 wherein it is combined with a sensor to control or change the rate of release.

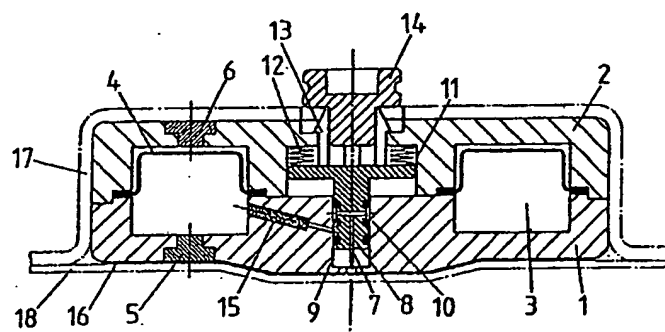


Fig.1

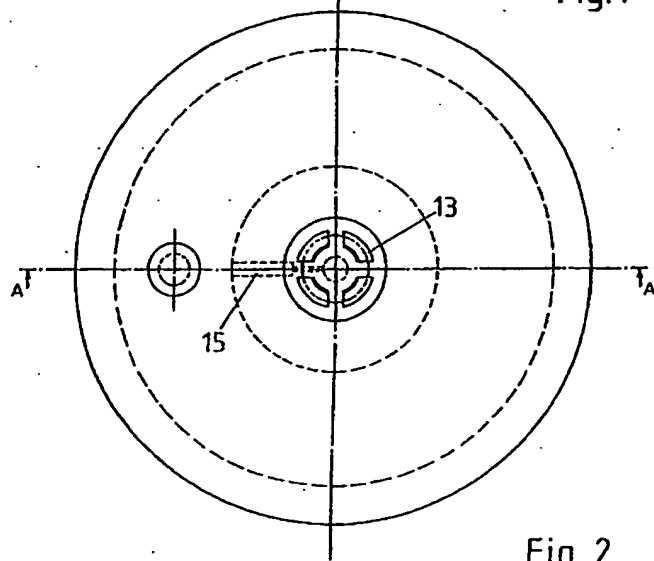


Fig. 2

(3)

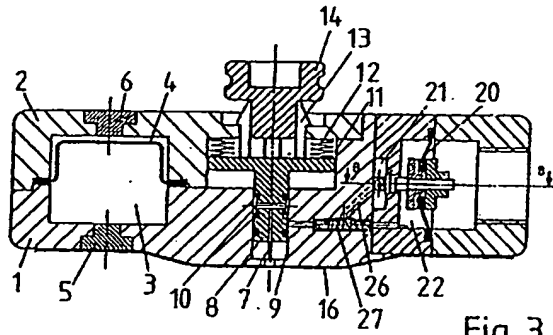


Fig. 3

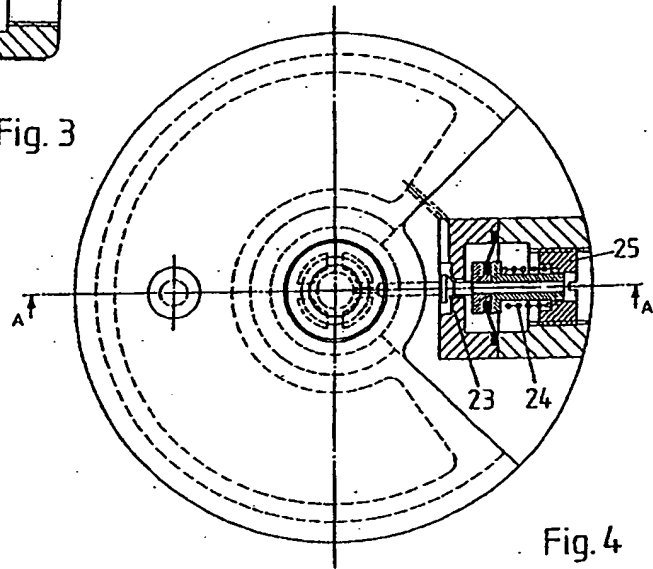


Fig. 4

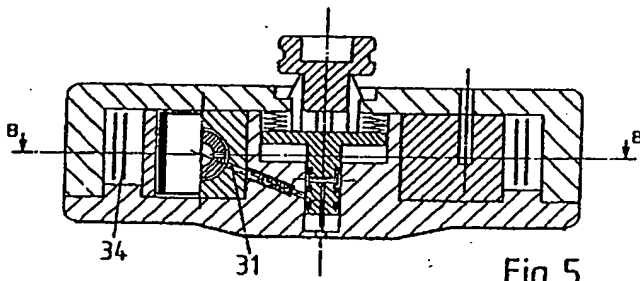


Fig. 5

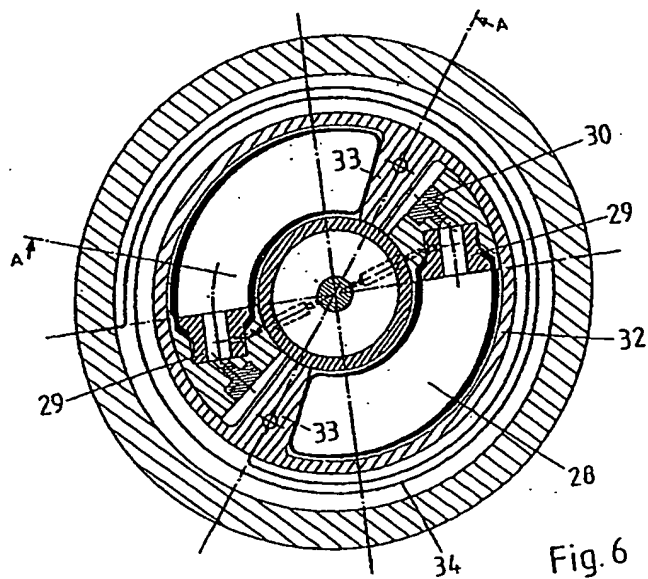
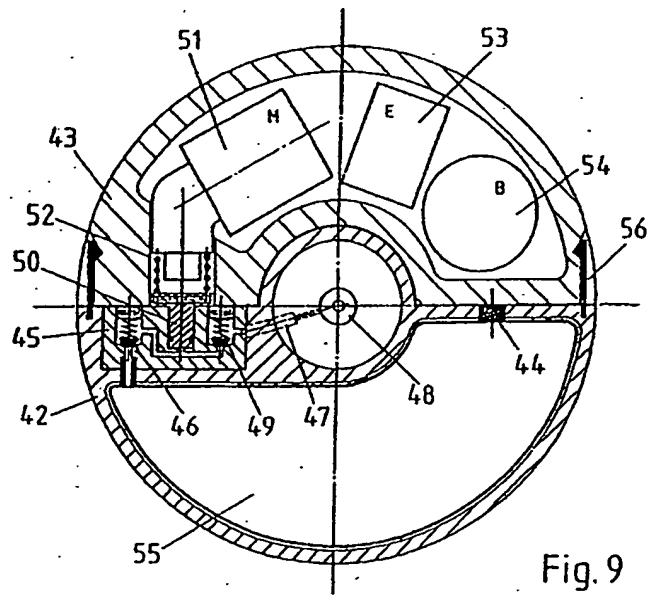
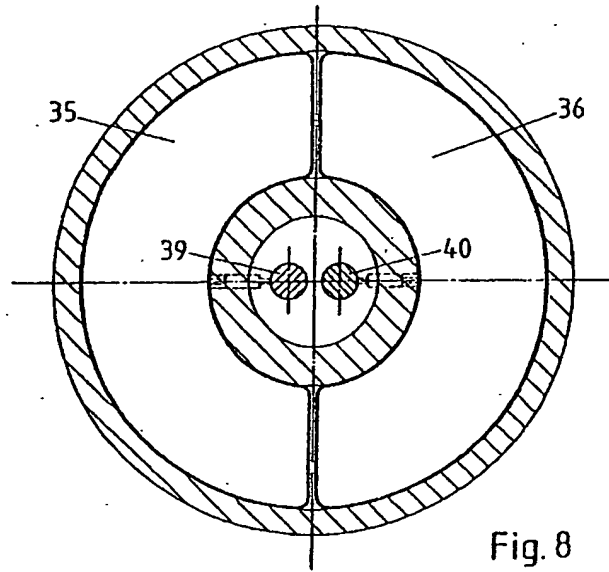
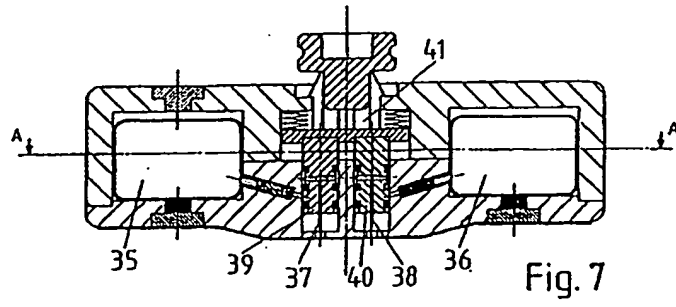


Fig. 6

(4)



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(44)中華民國80年(1991)04月11日

發 明

全 4 頁

(51)Int. Cl.: A61M
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(54)名 稱: 液態調配物之注射器

(21)申 請 案 號: 76107449

(22)申 請 日 期: 中華民國76年(1987)12月07日

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[57]申請專利範圍:

1. 一種供皮下或皮內注射有效成份之液態調配物使用之手提式器具, 其特點為一種組合, 包含: 一調配物供給容器(3); 一適合與該容器(3)溝通之注射針(7); 用以經由注射針(7)使容器(3)放空之泵裝置(4、32、34、50); 用以將該器具固著於病人身體適當部位之固定裝置(16、17); 以及用以將注射針(7)插入病人皮膚之針驅動裝置(12、13)。
2. 根據申請專利範圍第1項之器具, 其中流動控制裝置(20-25)。
3. 根據申請專利範圍第1項之器具, 其中係成二部份(42、43), 一部份為可再使用, 另一部份則可丟棄。
4. 根據申請專利範圍第3項之器具, 其中可丟棄部份(42)包含供給容器(3), 而可再使用部份則包含用以驅動泵裝置(50)之裝置(51-54)。
5. 根據申請專利範圍第1項之器具, 其中供給容器(3)係該器具上之一室, 該室係由一隔片(4)所分開。
6. 根據申請專利範圍第1項之器具, 其中供給容器(3)係風箱形式。
7. 根據申請專利範圍第1項之器具, 其中供給容器(3)係可擠壓軟管形式。
8. 根據申請專利範圍第1項之器具, 其中供給容器(3)係柱塞注射器形式, 其圓筒作用如供給容器。
9. 根據申請專利範圍第6、7或8項之器具, 其中提供一種吸收材料以吸收有效成份。
10. 根據申請專利範圍第1項之器具, 其中設有一個以上之供給容器。
11. 根據申請專利範圍第1項之器具, 其中泵裝置包含一室, 此室由一彈簧隔片與供給容器分開, 並且其中設有壓力產生裝置。
12. 根據申請專利範圍第11項之器具, 其中該室係予充填以推進劑蒸汽。
13. 根據申請專利範圍第11項之器具, 其中該室內設有用以產生壓力之電化學、光化學或化學系統。
14. 根據申請專利範圍第11項之器具, 其中該室內設有滲透或電滲透系統。
15. 根據申請專利範圍第1項之器具, 其中泵裝置包含一機械驅動裝置。
16. 根據申請專利範圍第15項之器具, 其中機械驅動裝置包含一彈簧、一雙金屬元件、一記形合金或一鐘錶機構驅動裝置。
17. 根據申請專利範圍第1項之器具, 其中

25.

泵裝置包含一電或磁驅動裝置。

18. 根據申請專利範圍第17項之器具，其中一電泵或隔片泵或壓電泵包含一電磁鐵機構驅動裝置或一電磁鐵作為電或磁驅動裝置。
19. 根據申請專利範圍第1項之器具，其中固定裝置為一黏合劑層形式。
20. 根據申請專利範圍第1項之器具，其中固定裝置為一膏藥貼片。
21. 根據申請專利範圍第19或20項之器具，其中使用一種含有局部麻醉之黏合劑層。
22. 根據申請專利範圍第1項之器具，其中針之直徑小於0.05公厘。
23. 根據申請專利範圍第1項之器具，其中針驅動裝置係結合於一控制供給容器與針之間溝通之閥。
24. 根據申請專利範圍第16項之器具，其中

僅使用驅動彈簧之彈簧偏轉之一部份。

25. 根據申請專利範圍第1項之器具，其中設有用以控制泵裝置之電子控制裝置，該控制裝置有一供預設程式釋出分佈型之數據記憶器。
26. 根據申請專利範圍第1項之器具，其中泵裝置為一種可擠壓軟管泵形式，此泵為可變軟管斷面，並且此泵使釋出分佈型可設定程式。
27. 根據申請專利範圍第1項之器具，其中針驅動裝置係予設計為供0.5 - 5公厘之穿刺深度。
28. 根據申請專利範圍第1項之器具，其中容器係設有由隔片予以關閉之孔，並且容器係在使用前不久經由此等孔予以充填。
29. 根據申請專利範圍第1項之器具，其中結合於感測器以控制或改變釋出速率。

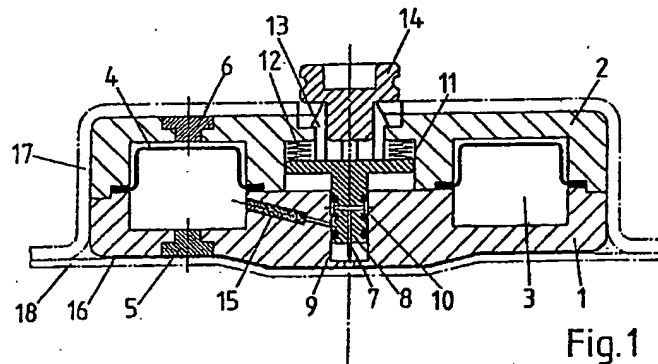


Fig. 1

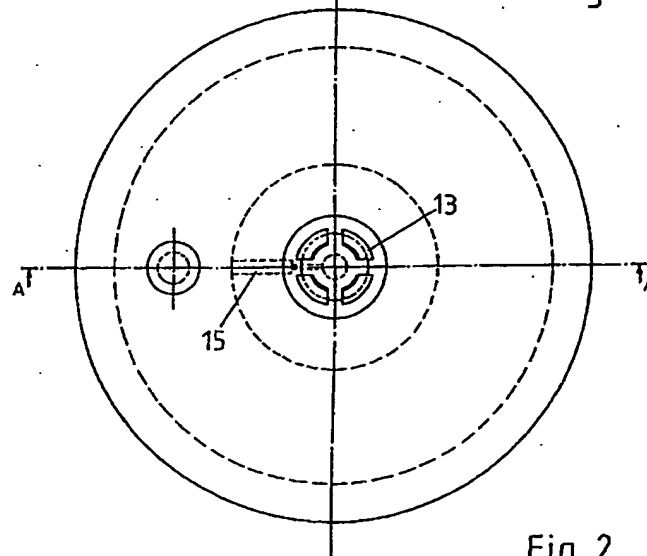


Fig. 2

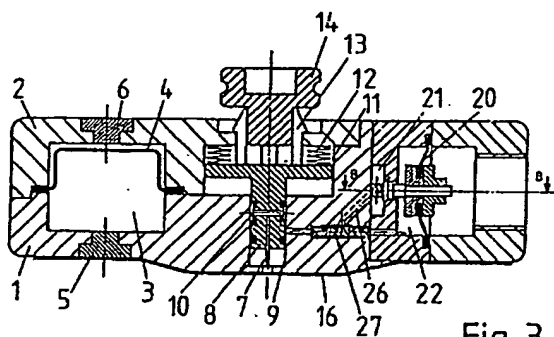


Fig. 3

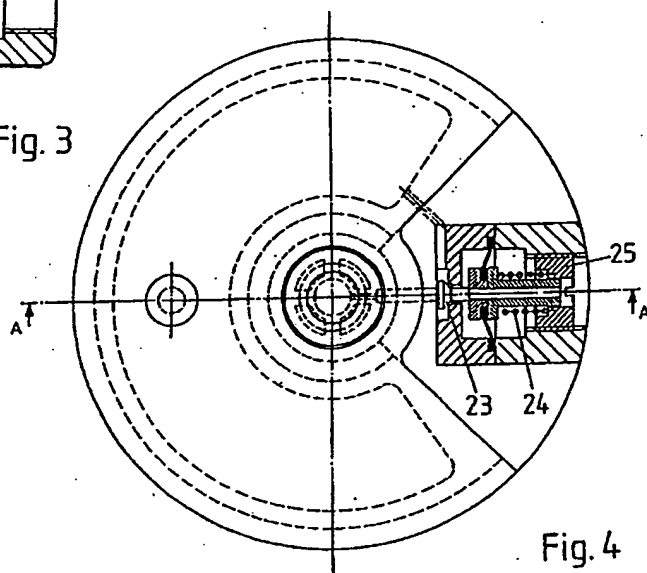


Fig. 4

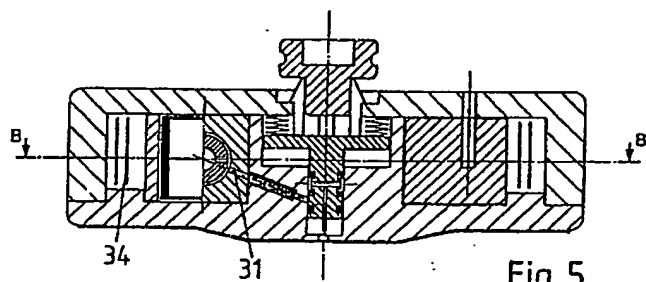


Fig. 5

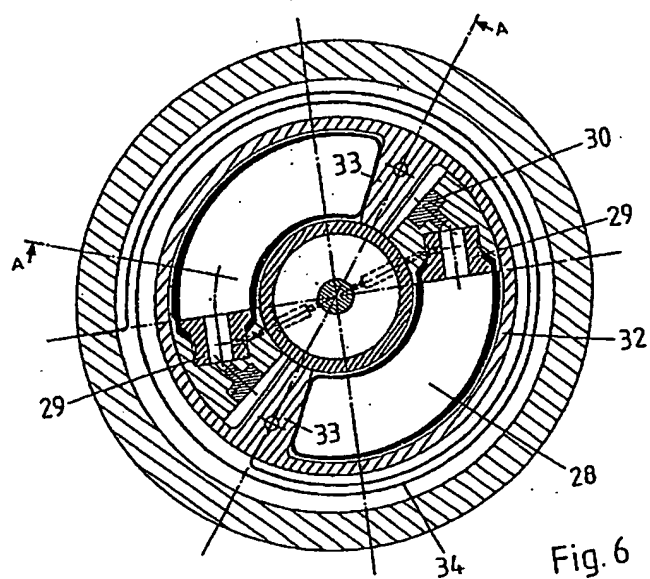


Fig. 6

(4)

